Data Use

Abstracts 4, 17, 18, 23, 32, 33, 48, 52, 53, 56, 57, 58, 59

An Immunization Registry Web-based Mapping Tool

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Key Words: Geographical Information Systems. GIS. Registry Management. Immunization Registry. Web.

Background: An immunization registry provides an information resource to facilitate a pro-active outreach program to address regional communicable diseases. Geographic Information Systems (GIS) are tools which when integrated with a registry, provide management with the ability to visually display and manipulate information. However, most GIS tools require skill sets not often available in the Immunization Program office. STC applied for and received a CDC Small Business Innovative Research Grant to develop a Web-based mapping tool to create a User Friendly interface.

Objectives: The development of this Web mapping product was incorporated with three pilot projects, two of which were immunization registries, one the Arizona Statewide Immunization System and the second the Delta Menominee immunization registry in upper Michigan. The objective was to demonstrate the effectiveness of a Web-based mapping tool in these environments.

Methods: The technical integration of GIS, health care databases and Internet technology is used to create a user friendly map generation tool.

Results: A demonstration of this tool as applied to these immunization registries will be presented.

Conclusion: The ability to integrate a tool that is widely available to registry users adds a new dimension to the effectiveness of this data resource. The Web and GIS can plan an important role in making immunization registries a pro-active component of outreach and effectiveness planning.

Learning Objectives: Review the issues and advantages of using a Web GIS with an immunization registry.

Using Registry Data to Assess Immunization Practices

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Key Words: Registry. Assessment. Managed care. HEDIS. Partnership.

Background: Oregon Immunization ALERT is one of the most developed immunization registries with data from 94% of county health departments, 85% of private providers, three of Oregon's largest health plans, electronic birth records, and school districts. Approximately 95% of children from birth through age five have immunization records in ALERT.

Objectives: Utilize ALERT data to assess clinic immunization rates and practices, assist Oregon's managed care plans with HEDIS immunization performance measures, assess immunization rates of children enrolled in Oregon Medicaid.

Methods: ALERT maintains effective relationships with private and public providers, health plans, and Oregon Medicaid. During 1999 ALERT provided immunization assessments for over 400,000 Oregon children—for private providers, county health departments, geographic regions, and under-served populations. ALERT provides immunization data to Oregon's four managed care plans for HEDIS purposes. Oregon is using ALERT for the GPRA accountability project for Medicaid immunization goals.

Results: By using data from both the public and private sectors, ALERT is able to conduct comprehensive immunization assessments for immunization providers, health plans, and Oregon Medicaid to improve immunization practices and support public health in Oregon. Health Plans and Medicaid Managed Care were able to fill in missing immunization information for HEDIS, save time and money, have more comprehensive immunization records, and target interventions more effectively.

Conclusions: Public and private providers participating in ALERT welcomed assessment as a useful component of the registry. The ability of ALERT to use consolidated immunization data from the registry for assessment purposes provided a more accurate assessment for providers, allowing them to focus on the most useful interventions.

Learning Objective: Understand how to use immunization registry data to identify children under-immunized, work with providers to improve immunization practices improve and the health of children under their care.

A Public/Private Collaboration to Create an Immunization Reminder and Recall System

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Key Words: Reminder. Recall. Partnership. Managed care.

Background: Reminder/recall notices for immunizations due or past due are an effective tool to improve children's immunization status. Providence Health Plan (PHP) offered to work with ALERT to develop and test reminder/recall functions with private providers. ALERT's statewide reminder/recall program will be based on what is developed through this collaborative effort with the public and private sectors.

Objective: To explain the model ALERT and PHP used to recruit and train private providers to participate in the reminder/recall pilot project.

Methods: Key clinics were identified for the project. Provider representatives from PHP contacted private providers to discuss participating in the pilot project. Meetings were scheduled with the providers, nurses, office staff, and ALERT to implement the project in private clinic.

Clinics were provided with reminder and recall reports for their patients ages 12-24 months. ALERT also provided reminder/recall postcards and mailing labels to match the reports. Clinics were asked to review the reports for accuracy, mail the postcards, and report results back to ALERT.

Results: Eight provider representatives recruited and scheduled meetings with over 25 large pediatric and family practice clinics throughout Oregon. Clinics were receptive to assisting ALERT in developing a reminder/recall system that is an effective and efficient use of resources. ALERT received good feedback on the system and was able to make adjustments as necessary.

Conclusions: The partnership among ALERT, PHP, and providers assisted the registry's development of its statewide reminder/recall system. The managed care and private provider support were key to securing widespread support throughout the provider community.

Learning Objective: Describe effective methods for partnering with managed care organizations to recruit and train private providers to participate in a registry pilot project. Share approaches to development of a statewide reminder/recall system.

A Managed Care/Registry Collaboration for Recall of Children In Need of Immunization

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Key Words: Reminder/Recall. Managed Care. Registry Data Use

Background: A pilot project has been initiated between the New York Citywide Immunization Registry (CIR) and three managed care organizations (MCOs) to test a methodology for recalling children in need of immunizations. The CIR has been in operation for nearly three years and reporting of immunizations is at a high level. Although matching and consolidation of records is a continuing challenge, progress in this area and ongoing collaborative work with MCOs has prepared the way for this pilot.

Objectives:

1 To develop and test an automated process for determining immunizations due for a batch file of children; and

2) To develop and test a methodology for an immunization registry to recall under-immunized children in collaboration with primary care providers and MCOs.

Methods: The MCOs are submitting electronic files of enrolled children to be matched against the CIR. A report of immunizations for each child will be generated and forwarded to the child's primary care provider (PCP) for review. The validated record will then be returned to the CIR, where additions and corrections will be made. For those children still found to be in need of immunizations, the CIR will produce recall letters or extract files which the MCOs will use to inform families of the need for immunization.

Results: Requirements and specifications for the pilot have been developed through a joint effort of the immunization registry and MCOs, with the assistance of HLN Consulting. Electronic files containing lists of children have been submitted to the CIR by the MCOs and matching is underway. Further results will be available in January 2000.

Conclusions: Immunization registries, MCOs and primary care providers can collaborate successfully to design and test methodologies for effective recall of under-immunized children.

Learning Objectives: Review elements of planning a collaborative pilot to recall children in need of immunizations. Describe the outcome of a pilot project to recall children in need of immunizations using a large, urban immunization registry.

Marketing HEDIS Data to Supplement Registry Revenue

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Target Audience: Program Managers

Key Words: HEDIS. Revenue. Managed Care. Integration Services

Background: RECIN is an Internet based system developed by Marshfield Clinic, a large private not-for-profit group practice in central Wisconsin. The registry has been successful in gaining the participation of all immunization providers, both public and private, in five counties in Central and Northern Wisconsin. The registry has successfully utilized a service bureau approach to connect all providers to a centralized data repository.

Objective: Describe the model used for developing HEDIS data to sell to local managed care organizations.

Methods: RECIN programmers have developed an integrator that allows managed care organizations to submit a random sampling of clients to the registry. The integrator creates cross-indexes between individual client to its respective patient in the registry. HEDIS immunization information is then extracted from RECIN and sent back to the managed care organization.

Results: We will report, from the managed care prospective, on the effectiveness and value of this approach for supplementing their immunization HEDIS data requirements.

Conclusions: Marshfield Clinic's RECIN program has been successful in using HEDIS data generation as a revenue source for the central registry.

Learning Objective: Describe how integration services can assist with generating accurate HEDIS data from immunization registries. Describe the value of this approach from the managed care prospective.

The Impact of Combining Primary Care and Public Health Department Immunization Data on Immunization Rates

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Key Words: Immunization rates. Public health. Primary care

Background: Immunization registries have been suggested as a way to increase immunization rates. Combining public and primary care immunization data in a registry could also benefit sites by providing a more accurate assessment of actual immunization status.

Objective: To quantify the change in primary care site immunization rates resulting from combining data from primary care and public health sites.

Methods: Medical records of a sample of 75 12-18 month olds and 75 24-30 month old children (or all records if there were less than 75 children in the cohort) were reviewed at each of 9 primary care sites in two rural communities. Records for the children were matched and combined with immunization records from the public health department in each of the communities. Immunization rates for each primary care site were recalculated using the combined records.

Results: Thirty-one percent of the children were seen at both a primary care site and the public health department. The immunization rates (3:2:3:2) of 12 month olds at individual sites ranged from 32%-79%. Including the public site data increased the rates at 7 of the 9 sites by 13% to 25% for 12 month olds. The immunization rates (4:3:1:3 and any Hib on/after 12 months) of 24 month olds at individual sites ranged from 6%-54%. Including the public site data increased the rates at all 9 sites by 5% to 21% for these children.

Conclusion: Low immunization rates and the lack of systems to communicate immunization data support the need for immunization registries combining primary care and public immunization data.

Learning Objective: To describe the effect of a virtual immunization registry on primary care site immunization rates.

Using Registries to Monitor the Implementation of New Vaccine Recommendations.

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Key Words: Data use. Research. New vaccine recommendations

Background: On July 7, 1999, the American Academy of Pediatrics (AAP) and the US Public Health Service (PHS) issued a joint statement regarding the cumulative exposure to thimerosal, a mercury-containing preservative, in vaccines. The joint statement recommended that providers postpone the first dose of hepatitis B vaccine from birth until 2 to 6 months of age for infants of mothers known to be hepatitis B surface antigen (HbsAg) negative. An important responsibility of public health is to evaluate provider response to such recommendations in order to promote delivery of immunizations in the safest and most effective manner.

Objective: To demonstrate the utility and feasibility of querying immunization registries for the purpose of monitoring the implementation and impact of new vaccine recommendations.

Methods: Immunization data were reported to the OSIIS from 541 of 1,679 (32%) provider sites representing 96% (227/237 sites) of public and 22% (314/1,442) of private provider sites in the state. Queries were written in structured query language (SQL) to monitor the counts of doses of hepatitis B vaccine and other vaccines given to infants at key age milestones.

Results: The number of hepatitis B vaccinations of infants < 1 month of age declined sharply after the joint statement by the AAP and PHS; the number of hepatitis B vaccinations for older infants remained stable. Administration of diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP) was unaffected after the joint statement.

Conclusions: Registries can serve an important role as timely, cost efficient systems for monitoring the implementation and impact of new vaccine recommendations in a manner that promotes the best public health practice.

Learning Objective: Demonstrate simple SQL queries that can be used to monitor the implementation of new vaccine recommendations. Compare the use of SQL queries to more elaborate approaches that may require more intensive data management.

Crude Trend Analysis of the Average Age Children Receive Selected Immunizations in San Bernardino County.

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Key Words: Evaluation. Trend Analysis. Immunization Outcomes.

Background: The San Bernardino County All Kids Count Immunization Tracking System (ITS) has been operational since 1994 and generating reminder and recall messages since late 1994. In November of 1999 public health staff used registry data to create a crude trend analysis of age of vaccine receipt for specific marker vaccines to analyze impact of registry on immunization receipt in San Bernardino County.

Objective: To describe the trends over time in the average age at which children in the ITS receive selected immunizations based upon their year of birth.

Methods: Conduct an analysis of the immunization records of all children enrolled in the ITS as of November 1999. Determine the average age children receive selected immunizations based upon their year of birth. Analyze trends to assess impact of registry on common age at which children receive certain vaccines.

Results: The data describe a trend of receiving immunizations at earlier ages.

Conclusions: Immunization registries with reminder and recall functions influence children to receive immunizations at earlier ages.

Learning Objectives: Participants will be able to:
- Describe the trend analysis method utilizing immunization registry data.
- Outline possible results and uses from crude trend analysis of registry immunization data.

Registry Evaluation of Health Care Provider Immunization Practice in Baltimore

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Key Words: Data Use. Provider Performance.

Background: Registry data is used to monitor and give feedback to health care providers on their clinical administration of childhood immunizations.

Objective: To measure health care provider immunization practice in reference to ACIP/AAP/AAFP recommendations, use of conjugate vaccines, level of vaccine overdosing, and percent of children who "drop off" or are "lost to care."

Methods: Vaccination histories representing 70% of Baltimore's under two year (0-23 month) cohort were extracted from Baltimore's Immunization Registry Program. Analysis was performed with CDC's "WinCASA" and "Epi Info."

Results: Analysis suggests that, in aggregate, Baltimore City pediatric care providers are complaint with ACIP/AAP/AAFP's recommended dose age and dose intervals. Of concern are MMR1 and VZV1 doses administered before the child's first birthday (5%), as well as DTP/aP4 and HIB4 given before 12 months (7%). One quarter of children (24%) received their DTP/aP4 earlier than the requisite six-month interval following DTP/aP3. The number of children receiving at least one dose of conjugate DTaP-HIB and HIB-HepB remains low (7%-9%). One third (30%) of children received at least one dose of DTP-HIB. Antigen specific overdosing was minimal (1.0% $\pm$ 0.5%) affecting 2% of children immunized. A 15% "drop off" in coverage revealed problems ensuring one year olds their DTP/aP4, Polio3 and HIB4 doses. Of one year old children not up-to-date, 7% are considered "lost to care"; i.e., over one year has passed since their last vaccination(s).

Conclusions: In addition to assessing antigen specific and series completion, immunization registry data can be utilized to profile pediatric immunization practice. Identified problems can be used to improve provider education, registry marketing, etc.

Learning Objectives: Describe the use of immunization registry data to monitor pediatric immunization practice.

Using Baltimore's Immunization Registry to Measure Neighborhood Vaccination Coverage

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Key Words: Data use. Neighborhood Immunization Coverage.

Background: CDC/NIP reports that coverage for childhood vaccinations have never been higher, and that the incidence of vaccine preventible disease is at an historic low. Is CDC's measure of Baltimore's immunization coverage valid and reliable? Are there alternatives?

Objective: To compare and contrast tools that assess immunization coverage and that identify neighborhoods at risk for under immunization.

Methods: The study examines the use of:
1) Inferred measurement through socio-economic indicators,
2) CDC/NIP National Immunization Survey (NIS),
3) Birth Certificate Follow-Back,
4) Kindergarten Retrospective Survey,
5) HEDIS measure for commercial MCOs,
6) Clinic Assessment of Provider Based Medical Records (CASA), and
7) Baltimore's Immunization Registry Program (BIRP).

Results: Based on comparison of BIRP data, medical record audits and other surrogate measures, the NIS over-estimates by 15%-20% immunization coverage in Baltimore's inner city, but does accurately reflect time trends. Strong (reliable, valid), though not timely, tools include measurement through socio-economic indicators and kindergarten retrospective surveys. Existing resource constraints prohibit the widespread use of Birth Certificate Follow-Back and CASA. Examination of commercial managed care HEDIS suggest significant gaps in their collection of electronic billing/encounter data. Questions regarding current data collection and validation dilute BIRP's robustness. Overlay from multiple methodologies enhances the assessment of coverage and identification of at risk neighborhoods.

Conclusion: Baltimore's Immunization Registry promises real time measurement of neighborhood childhood vaccination coverage. The absence of strong correlation with other measures (especially SES, K-Retro Survey) suggest, however, that time is needed before BIRP reaches full maturity as a stand alone assessment tool.

Learning Objectives: Describe the strength and weakness of direct and inferred measurements that identify neighborhoods at risk for under immunization.

Developing Both Public And Private Partnerships With The Use Of An Integrated Immunization Registry System

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San Antonio Metropolitan Health District

Key Words: Partnerships. WIC. Schools. Day Cares. Managed Care Organizations (MCOs). Private/Public Providers

Background: The San Antonio Metropolitan Health District (SAMHD) has had a working immunization registry system in place for almost twenty years. The San Antonio Immunization Registry Systems (SAIRS) has over 870,000 records and over 6,400,000 individual immunizations. This registry can be utilized by immunization assessors and providers that include Women, Infants, and Children (WIC) Centers, nursing and public health clinics, public and private schools, day cares, MCOs, and other public and private immunization providers from both San Antonio and the state of Texas.

Objective: To demonstrate how public health immunization programs can use registry technologies to develop and foster relationships with other immunization stakeholders in San Antonio.

Methods: Review how SAIRS has become a community-wide tool for promoting and improving overall immunization efforts in San Antonio.

Results: In the past five years, the number of providers accessing the SAIRS has increased from 125 to well over 1,200. WIC Centers, schools, day cares, and both public and private immunization providers view the SAIRS as an essential component for the successful delivery of immunization services to their clientele. All immunization stakeholders are partnering with the SAMHD to increase the exchange of information and improve the accuracy of data contained within the SAIRS.

Conclusion: Developing partnerships around a successful immunization registry system will improve the overall immunization efforts for San Antonio and Bexar County

Learning Objective: Demonstrate the benefits of increasing the involvement of all public and private immunization stakeholders through the continued use of a local immunization registry system.

Using Immunization Registries to Speed Public Acceptance of Changes in Vaccine Usage

Terry D. Boyd, San Antonio Metropolitan Health District

Target Audience: Immunization Program Managers, Registry Administrators, and Data Research Staff

Objective: To demonstrate how immunization registry data can be used to track changes in vaccine uses and implementation of new vaccines and schedules.

Background: New vaccines are being developed and new vaccine schedules implemented at an increasing rate. While it is extremely important for programs to evaluate the effectiveness of programs aimed at rapidly informing both public and private providers of these changes, it is often difficult to gather specific data that can help Health Departments fine tune their education efforts.

Methods: The San Antonio Immunization Registry System (SAIRS) has been used by the immunization program to track the implementation of new vaccine recommendations for several years. The adaptation of local physicians to both changes in immunization schedule and the addition of new vaccines are measured and used to pinpoint where additional education efforts are needed.

Results: These data tracking efforts have allowed the San Antonio immunization program to better utilize shrinking resources by targeting only those providers that have yet to implement new ACIP recommendations.

Conclusions: Proper use of immunization registry data can help immunization programs speed up the implementation of changes in vaccine usage.

Learning Objectives:
- Understand how registries can gather the information needed to monitor changes in vaccine usage.
- Understand the process of turning raw immunization data into targeted program objectives.

Immunization Rate Comparison
Using Immunization Registry Technologies

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San Antonio Metropolitan Health District

Key Words: CASA. Vaccine For Children Providers. AFIX. Public/Private Immunization Providers

Background: The Clinic Assessment Software Application (CASA) was designed by the Centers for Disease Control and Prevention (CDC) to measure immunization coverage rates. CASA serves as a tool to assess progress towards the national objective of 90% immunization coverage for children two years of age.

Objective: To demonstrate to public and private providers how the daily use of the San Antonio Immunization Registry System (SAIRS) will improve their overall immunization rates and reduce the number of missed opportunities to vaccinate.

Methods: SAMHD has integrated the use of SAIRS to enhance the diagnostic validity of the CASA process for San Antonio's VFC provider base. SAIRS is available to all VFC providers through automated dialing technology and Internet connections. A missing immunization report on each VFC provider is generated and queried with SAIRS to identify missing immunizations

Results: A comparison of immunization records between the CASA result and review using the San Antonio Immunization Registry System shows an increase in immunization coverage levels on average of 21-23%.

Conclusion: The CASA process is enhanced through the consistent use of an immunization registry. CASA can be used to market the use of an immunization registry and validate the CASA process for immunization providers and public health departments.

Learning Objective: Describe an effective method for both public and private immunization providers to increase their immunization rates and decrease their over-immunization or missed opportunities through the use of an immunization registry system.